

a display controller controlling to change the display of the object image in accordance with the recognized, simulated manipulation of the object, and object information for the displayed object image, including data relative to a type of the displayed object.

56. (NEW) A controller for use with a display device to manipulate an object displayed on the display device and an input device responsive to a touching contact relative to the displayed object image, the touching contact simulating said manipulation, the input device outputting corresponding touch information; the controller comprising:

a storage unit storing a plurality of object information, each object information specifying a responsive manipulation type of each object; and

a display controller controlling to change the display of the object image in accordance with the touch information and the stored object information specifying a manipulation type of the object.

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57. (NEW) An apparatus for use with a display device to manipulate an object image displayed on the display device, the apparatus comprising:

an input device inputting a manipulation to the displayed object and outputting corresponding input information;

a storage unit storing object information specifying object having and its center of gravity;

a display controller controlling to change the display of the object image in accordance with the input information and the object information.

58. (NEW) An apparatus according to claim 57, wherein said input device is responsive to a touching contact relative to the displayed object image, the touching simulating said manipulation, and outputs corresponding touch information and said display controller controls the display of the object image in accordance with the touch information and the object information.

59. (NEW) An apparatus according to claim 57, wherein, in response to touch information indicating a movement such that the touching touches the object at its center or center of gravity, moves and stops while keeping in contact with the object,

said display controller recognizes the movement as a push manipulation and controls the object so that the object moves from where the body touches the object to where the body stops.

60. (NEW) An apparatus according to claim 57, wherein in response to touch information indicating a movement such that the touching contact touches the object at a position off the center or the center of gravity thereof, moves and stops on said touch panel while keeping in contact with the object, said display controller controls the object image on the display device so that the object moves while rotating from where the touching contact touches the object to where the body stops.

61. (NEW) A controller for use with a display device to manipulate an object displayed on the display device and an input device inputting a manipulation to the displayed object and outputting corresponding input information, the controller comprising:

a storage unit storing object information specifying object having its center of gravity;

a display controller controlling to change the display of the object image in accordance with the input information and the object information.

62. (NEW) A method for simulating manipulation of a displayed object, comprising:

displaying an image of an object;

responding a manipulation to the displayed object from an input device and outputting corresponding input information;

controlling to change the display of the object image in accordance with the input information and the object information specifying object having its center of gravity stored in a storage unit.

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63. (NEW) A computer readable medium storing therein a computer program affording simulated manipulation of the displayed object, said computer program comprising:

a first function of responding a manipulation to the displayed object from an input device and outputting corresponding input information;

a second function of controlling to change the display of the object image in accordance with the input information and the object information specifying object having its center of gravity stored in a storage unit.

64. (NEW) An apparatus for use with a display device to manipulate an object displayed on the display device, the apparatus comprising:

an input device inputting a manipulation to the displayed object and outputting corresponding input information;

a storage unit storing object information specifying object being subject to inertia;

a display controller controlling to change the display of the object image in accordance with the input information and the object information.

65. (NEW) An apparatus according to claim 64, wherein said input device is responsive to a touching contact relative to the displayed object image, the touching contact simulating said manipulation, and outputs corresponding touch information and said display controller controls the display of the object image in accordance with the touch information and the object information.

66. (NEW) An apparatus according to claim 65, wherein in response to touch information indicating a movement such that a touching touches the object from a position apart therefrom at a speed, said display controller recognizes the movement as a flip manipulation and controls the object so that the object moves a distance proportional to the speed and in the direction toward which the touching contact touches the object.

67. (NEW) An apparatus according to claim 66, wherein in response to touch information indicating a movement such that a touching touches the object from a position

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apart therefrom at a speed, and in response to object information specifying that the object is subject to gravity, said display controller controls the object on the display device so that the object moves a distance proportional to the speed and along a trajectory.

68. (NEW) A controller for use with a display device to manipulate an object displayed on the display device and an input device inputting a manipulation to the displayed object and outputting corresponding input information, the controller comprising:

a storage unit storing object information specifying object being subject to inertia;

a display controller controlling to change the display of the object image in accordance with the input information and the object information.

69. (NEW) A method for simulating manipulation a displayed object, comprising:  
displaying an image of an object;  
responding a manipulation to the displayed object from an input device and outputting corresponding input information;  
controlling to change the display of the object image in accordance with the input information and the object information specifying object being subject to inertia stored in a storage unit.

70. (NEW) A computer readable medium storing therein a computer program affording simulated manipulation of displayed object, said computer program comprising:

a first function of responding a manipulation to the displayed object from an input device and outputting corresponding input information;

a second function of controlling to change the display of the object image in accordance with the input information and the object information specifying object being subject to inertia stored in a storage unit.

71. (NEW) An apparatus for use with a display device to manipulate an object displayed on the display device, the apparatus comprising:

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an input device inputting a manipulation to the displayed object and outputting corresponding input information;

a display controller controlling to change the display of the object on the display device so that the object moves on the display device from where the two touches touch both sides of the object to where the two touches stop, in accordance with the input information indicating a movement such that two contact touch both sides of the object and move.

72. (NEW) An apparatus according to claim 71,

wherein said input device is responsive to a touching contact relative to the displayed object image, the touching contact simulating said manipulation, and outputs corresponding touch information, and

the display controller controlling to change the display of the object image on the display device so that the object moves on the display device from where the two touching contact touch both sides of the object to where two touching contact stop, in accordance with the touch information indicating a movement such that two touching contact touch both sides of the object and move.

73. (NEW) An apparatus of claim 72, further comprising:

a storage unit storing position information which specifies the position where the object is displayed on the display device;

wherein the display controller, in accordance with the touch information and display position information, recognizes that a movement such that two touching contact touch both sides of the object and move, and controls the object on the display device so that the object moves on the display device from where the two touching touch both sides of the object to where the two touching stop.

74. (NEW) A controller for use with a display device to manipulate an object displayed on the display device and an input device inputting a manipulation to the displayed object and outputting corresponding input information, the controller comprising:

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a display controller controlling to change the display of the object on the display device so that the object moves on the display device from where the two touches touch both sides of the object to where the two touches stop, in accordance with the input information indicating a movement such that two contact touch both sides of the object and move.

75. (NEW) A method for simulating manipulation of a displayed object, comprising:

displaying an image of an object;

responding a manipulation to the displayed object from an input device and outputting corresponding input information;

controlling to change the display of the object on the display device so that the object moves on the display device from where the two touches touch both sides of the object to where the two touches stop, in accordance with the input information indicating a movement such that two contact touch both sides of the object and move.

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76. (NEW) A computer readable medium storing therein a computer program affording simulated manipulation of displayed object, said computer program comprising:

a first function of responding a manipulation to the displayed object from an input device and outputting corresponding input information;

a second function of controlling to change the display of the object on the display device so that the object moves on the display device from where the two touches touch both sides of the object to where the two touches stop, in accordance with the input information indicating a movement such that two contact touch both sides of the object and move.

77. (NEW) An apparatus for use with a display device to manipulate an object displayed on the display device, the apparatus comprising:

an input device inputting a manipulation to the displayed object and outputting corresponding input information;

a display controller controlling to change the display of the object image in rolling condition, in accordance with the input information.

78. (NEW) An apparatus according to claim 77, wherein:  
said input device is responsive to a touching contact relative to the displayed object image, the touching contact simulating said manipulation, and outputs corresponding touch information; and  
said display controller controls the display of the object image in rolling condition, in accordance with the touch information.

79. (NEW) The apparatus according to claim 78, further comprising:  
a storage unit storing object information indicating that the object is rollable; and  
wherein display controller controls the object in rolling condition, in accordance with the touch information.

80. (NEW) A controller for use with a display device to manipulate an object displayed on the display device and in input device inputting a manipulation to the displayed object and outputting corresponding input information, the controller comprising:  
a display controller changing the display of the object image in accordance with the input information, in rolling condition.

81. (NEW) A method for simulating manipulation of a displayed object, comprising:  
displaying an image of an object;  
responding a manipulation to the displayed object from an input device and outputting corresponding input information;  
controlling to change the display of the object image in rolling condition, in accordance with the input information.

82. (NEW) A computer readable medium storing therein a computer program affording simulated manipulation of the displayed object, said computer program comprising:  
a first function of responding a manipulation to the displayed object from an input device and outputting corresponding input information;

a second function of controlling to change the display of the object image in rolling condition, accordance with the input information.

83. (NEW) An apparatus for use with a display device to manipulate an object displayed on the display device, the apparatus comprising:

an input device responsive to a touching contact relative to the displayed object image, outputting corresponding input information;

a storage unit storing object information about a large one extending beyond a display area; and

a display controller, in accordance with the object information and the input information indicating a movement such that the touching contact moves a distance more than predetermined distance or the touching contact moves in a speed higher than a predetermined speed, controlling to display the object on the display device in scroll condition.

84. (NEW) An apparatus according to claim 83, wherein said display controller controls to start scroll in a speed and gradually decrease the speed of the scroll.

85. (NEW) An apparatus according to claim 84, wherein said starting speed of scroll depends on said speed or said distance which said touching contact moves.

86. (NEW) An apparatus according to claim 83, wherein said display controller controls to start scroll in a speed and decrease speed of the scroll in case where another touching contact does not occur.

87. (NEW) An apparatus according to claim 84, wherein said display controller controls to continue scroll in case where another touching contact occurs before stop of scroll.

88. (NEW) An apparatus according to claim 83, wherein said display controller controls to stop scroll in a case where touching contact stops in scrolling.

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89. (NEW) A controller for use with a display device to manipulate an object displayed on the display device and an input device responsive to a touching contact relative to the displayed object image, outputting corresponding input information, the controller comprising:

    a storage unit storing object information about a large one extending beyond a display area; and

    a display controller, in accordance with the object information and the input information indicating a movement such that the touching contact moves a distance more than predetermined distance or the touching contact moves in a speed higher than a predetermined speed, controlling to display the object on the display device in scroll condition.

90. (NEW) A method for simulating manipulation of a displayed object, comprising:

    displaying an image of a part of an object which extends beyond a display area;

    responding a touching contact to the displayed object from an input device responsive to a touching contact to the displayed object from an input device responsive to a touching contact relative to the displayed object image and outputting corresponding input information; and

    controlling to display the object on the display device in scroll condition, in accordance with the input information indicating a movement such that the touching contact moves a distance more than predetermined distance or the touching contact moves in a speed higher than a predetermined speed.

91. (NEW) A computer readable medium storing therein a computer program affording simulated manipulation of displayed object, said computer program comprising:

    a first function of responding a manipulation to a displayed object from an input device responsive to a touching contact relative to the displayed object image and outputting corresponding input information, said displayed object extending beyond a display area; and

    a second function of controlling to display the object on the display device in scroll condition, in accordance with the input information indicating a movement such that the

touching contact moves a distance more than predetermined distance or the touching contact moves in a speed higher than a predetermined speed.

92. (NEW) An apparatus for use with a display device to manipulate an object displayed on the display device, the apparatus comprising:

an input device inputting a manipulation to the displayed object image, outputting corresponding input information;

a storage unit storing object information specifying that the object is a large one extending beyond a display area; and

a display controller, in accordance with the object information and the input information indicating a movement such that the contact of the manipulation moves a distance more than predetermined distance or a contact of the manipulation moves in a speed higher than a predetermined speed, controlling to display the object on the display device in scroll condition.

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93. (NEW) An apparatus according to claim 92, wherein said display controller controls to start scroll in a speed and gradually decrease the speed of the scroll.

94. (NEW) An apparatus according to claim 93, wherein said starting speed of scroll depends on said speed or said distance which said contact moves.

95. (NEW) An apparatus according to claim 92, wherein said display controller controls to starts scroll in a speed and decrease speed of the scroll in case where another contact does not occur.

96. (NEW) An apparatus according to claim 93, wherein said display controller controls to continue scroll in case where another contact occurs before stop of scroll.

97. (NEW) An apparatus according to claim 92, wherein said display controller controls to stop scroll in a case where the contact stops in scrolling.

98. (NEW) A controller for use with a display device to manipulate an object displayed on the display device and in input device inputting a manipulation to the displayed object image, outputting corresponding input information, the controller comprising:

a storage unit storing object information specifying that the object is a large one extending beyond a display area; and

a display controller, in accordance with the object information and the input information indicating a movement such that a contact of the manipulation moves a distance more than predetermined distance or a contact of the manipulation moves in a speed higher than a predetermined speed, controlling to display the object on the display device in scroll condition.

99. (NEW) A method for simulating manipulation of a displayed object, comprising:

displaying an image of apart of an object which extends beyond a display area;

responding a manipulation to the displayed object from an input device; and

controlling to display the object on the display device in scroll condition, in accordance with the input information indicating a movement such that a contact of the manipulation moves a distance more than predetermined distance or the a contact of the manipulation moves in a speed higher than a predetermined speed.

100. (NEW) A computer readable medium storing therein a computer program affording simulated manipulation of displayed object, said computer program comprising:

a first function of responding a manipulation to a displayed object from an input device outputting corresponding input information, said displayed object extending beyond a display area; and

a second function of controlling to display the object on the display device in scroll condition, in accordance with

the input information indicating a movement such that a contact of the manipulation moves a distance more than predetermined distance or a contact of the manipulation moves in a speed higher than a predetermined speed.

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